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Rural Lines

AUGUST

1958



System Map in Relief

Telephone Section

see page 3

see page 19



A Message from the

ADMINISTRATOR

THIS year employees of rural electrical systems are being killed in on-the-job accidents at twice the rate of last year. In the first 6 months of 1958, 18 men lost their lives, compared with 19 during all of 1957. If this loss of life continues at the same rate, 1958 will be the second worst accident year in borrower history.

Thirteen of the 18 men killed during the first half were electrocuted, and not one of them was wearing rubber gloves at the time of the accident. REA and State safety instructors have been preaching the importance of wearing gloves for many years, and I had supposed that all rural utilities had a hard and fast rule that they be worn.

Plainly, there has been a letdown in safety enforcement. After the terrible year of 1949, when the lives of 44 borrower employees were taken by accident, the fatality trend went down for 7 consecutive years, reaching a low of 12 deaths in 1956. Then last year it started back up, and it is climbing still faster this year. Even before this magazine could go to press, electric shock claimed the 19th victim of 1958.

It is one of the axioms of industrial safety that top management is responsible for safe job procedures—or the lack of them. It does no good to hang the blame on the line supervisor, because management that takes job safety seriously has ways to make sure that foremen follow instructions.

Nearly all the rural systems have job safety programs and I have no doubt that these have saved many lives. But job safety programs are like so many things common to the successful operation of an electric system. They require constant and careful checking.

I would like to suggest that boards and managers run a check on their safety programs. The big question to ask is: are rules and regulations enforced?

The time to start is today. It may save a life.

David G. Hamer
Administrator.

Rural Lines

**Editor: Hubert Kelley, Jr. This month's contributors: Louisan Mamer,
M. A. Chase, Mrs. H. P. Gillespie, Jack Howard.**

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This Month's Cover Story

Homemade System Map Helps Pinpoint Trouble



THE big operating map in the dispatch room of the Runestone Electric Association, Alexandria, Minn., is a homemade affair, constructed of common materials found in any co-op shop. Line Foreman Abner Hinton and his helpers built it during the two long Northern winters, when rough weather frequently kept the men indoors.

Using county road maps, system maps, and aerial maps as guides, Hinton first drew the design on white-painted plywood. Scores of lakes in the area were painted blue, and highways were added as black lines.

For the relief portions of the map, Hinton selected treated copper wire for distribution lines, heavier wire for the co-op's transmission lines, and heavy black wires for substation division lines. Distribution lines are color-coded, with yellow marking A phase, red marking B phase, and silver marking C phase.

Red metal arrows cut from tin cans mark openings in lines; tin triangles locate substations, and squares mark oil circuit breakers for transmission lines. Colored carpet tacks mark oil circuit reclosers and sectionalizers of varying amperage.

Small black-headed nails show the location of each consumer on Runestone's lines, and red-headed nails identify consumers with electric water heaters. (Note the heavy concentration of consumers

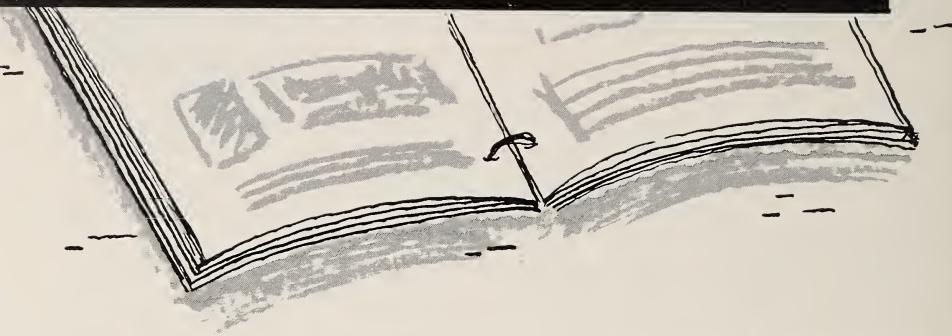
around some of the larger lakes. Year-round lakeside cottages account for a good portion of the rapid consumer growth since World War II in many Minnesota service areas.)

"The map is so detailed and accurate," Hinton said, "that we can usually pinpoint trouble right away and dispatch crews promptly to take care of it. For example, if we get trouble calls from consumers on three different phase lines we can be pretty sure there's a substation out."

Scale maps like the one at Runestone can be useful tools in States like Minnesota, where the land was divided into townships, ranges, and sections before it was settled. Roads usually follow section lines, and any point in the area can be precisely located.

In the 13 original States, however, where surveys followed settlers by many years and roads meander all over the map, other types of system diagrams have to be substituted for the scale map. At Central Virginia Electric Cooperative, in Lovingston, for instance, the system map is laid out on the basis of circuit lines, with pole and meter numbering systems the only key to location of consumers and equipment. Each lineman carries his own copy of the key, since it is next to impossible to tell him the location of any member in terms of geography.

The Foremen Write a Book



With the aid of co-op foremen and scores of other groups and individuals, Ohio safety instructors publish the first of a projected series of five training manuals for electric linemen.

IN the works for six years, Ohio's 5-year-plan for teaching safe job procedure to co-op outside plantmen received its first trial run this year.

The plan had its genesis in 1952, when two instructors employed by Ohio's Trade and Industrial Education Division wondered if there weren't better ways to teach job safety than were being used then. The dissatisfied teachers were Consultant C. A. High and Instructor Owen Manning, now manager of the Tuscarawas-Coshocton Electric Cooperative, at Coshocton, Ohio.

Recalling those early talks with Chet High, Manning said that



Ohio's Owen Manning, who has worked for safer job procedures in three different capacities, credits scores of others with helping to make a success of his State program.

"our chief concern was that we couldn't be sure that any given co-op employee had covered—much less absorbed—all of the information vital to the safe and thorough performance of his job. We were tossing it at him, but we weren't sure he was getting it all."

Manning and High envisioned a series of training manuals, which would contain lessons covering every phase of a lineman's job.

For help, the two men turned to the co-op employees who knew the

most about proper job procedure—the foremen. Inviting them to come in for talks—ten at a time—Manning and High started the laborious task of deciding what should be in the manuals. Working closely with the committee of authors was Carl Schaefer, now assistant supervisor of the T&I Education Division.

"Little by little, we began to develop the material," Manning said. "Those foremen really knew their stuff."

Word of the project got around to other States. In 1956, the National Job Training and Safety Conference, which had long recognized the need for training manuals, decided to pool efforts to help make the Ohio manuals acceptable nationally. In North Carolina, a national editing com-

mittee was set up, comprised of the past presidents of the National Conference.

"They took the book all apart again," Manning reported.

First tangible result of the co-operative book-writing job appeared last fall, with publication of series 100 of the *ELECTRIC LINEMAN*, designed for groundmen and third class linemen. A handsome 223-page volume, it contains excellent drawings and photographs, more than 50 individual lessons and assignments, hundreds of questions, and space for an individual progress report. It is more of a guide than a text; outside reading in texts like E. B. Kurtz's *The Lineman's Handbook* is assigned with each lesson.

Plans call for printing four more manuals — one each fall

At the first outdoor training center in Coshocton, employees of Tuscarawas-Coshocton Electric Cooperative start learning their trade literally from the ground up. Their first training manual is for groundmen; the next one will take them aloft.



through 1961. Each will be more difficult than the last with series 200 covering lessons for men just beginning to climb, and series 500 covering the duties of a foreman.

So far, more than 3,000 copies of series 100 have been sold outside Ohio, along with 500 sold within the State. Manning, who is now in Coshocton, said that his co-op buys manuals for all outside plantmen and keeps up the progress reports on each employee.

But that isn't the whole story, by any means. When Manning left State employment to manage a co-op (he was replaced by instructor Wayland Hamilton, who saw the publishing job through) he kept up his safety activities. Now he is chairman of the Job Training and Safety Committee for Ohio, a group of 3 managers, 3 directors, and 3 co-op foremen which advises the State T&I Education specialists.

To make fuller use of the new manual, Manning and others decided to set up an outdoor training school in a vacant lot across the street from Manning's co-op headquarters in Coshocton. Classes are held for three consecutive days every other month, covering enough lessons each time

50 Exhibits Booked for Power Use Conference

ELECTRIC space heating displays will vie with electric farm production machinery exhibits at the 5th annual National Power Use Conference at Buffalo, N. Y., this fall.

This became apparent with the release by the sponsoring Inter-Industry Farm Electric Utilization Council of a partial list of 50 exhibitors for the Conference,

to complete a manual in a year's time. Students are required to complete all relevant written lessons before attending classes.

Participating with Tuscarawas-Coshocton in the first school are Carroll Electric Cooperative, Carrollton; Guernsey - Muskingum Electric Cooperative, New Concord; Licking Rural Electrification, Utica; Belmont Electric Cooperative, St. Clairsville; and Holmes Rural Electric Cooperative, Millersburg.

Before the second series of classes was underway, three more Ohio co-ops had asked the State committee for schools of their own. A special study committee was formed to select appropriate locations for five more centers, and by next year almost every Ohio co-op may have a permanent training school in its area to which to send plantmen.

"It's been a long time coming," said Manning, "but now that it's here, I think it will mean better job performance—and safer performance, too."

Copies of the series 100 manual may be obtained from Dr. Byrl R. Shoemaker, supervisor, Ohio Trade and Industrial Education Service, Columbus, Ohio, for \$1.65 each.

which is expected to attract about 1,000 electric cooperative and power company people, manufacturers, and educators to the Lake Erie city on Oct. 5, 6 and 7.

Included among educational exhibits will be those of the Agricultural Research Service, Cornell University, Farm Better Electrically, Federal Extension Service, Live Better Electrically, National Electrical Week, National Wiring Bureau (Housepower), NRECA, and REA.

Model of the 22,000 kw Montpelier Station of the Eastern Iowa Light and Power Cooperative, a steam generating plant now under construction on the Mississippi River.



A LOOK AT RURAL G & T

by M. A. Chase

Assistant Chief (Generation)

REA Electric Engineering Division

Part I

SINCE 1936, REA has loaned almost \$800 million for the construction of generation and transmission systems, consisting of almost two million kw of generating capacity and 41,000 miles of transmission lines.

The loans have financed installations ranging from small 40 kw diesel units to a 100,000 kw steam turbine. They have provided for short, low voltage transmission lines needed to deliver but a few hundred kilowatts, as well as for the construction of expensive, high-voltage transmission systems.

Some of the REA-financed systems consist of several generating plants and hundreds of miles of transmission lines; other loans covered the construction of generating plants only; still others

went for transmission systems without generation.

The diversity of systems stems from the basic criterion that REA loans will be made for construction of G & T only (1) when no adequate source of supply is available or (2) if the resultant costs show a saving over other methods of supply. REA makes such a determination in each case, acting upon proposals of the prospective borrowers. It is not surprising, in view of the many variables, that such a variety of systems should result.

A few patterns and trends have developed, however, despite the diversity. Let's look at a few of them—

- *Rural G & T systems are characteristically low load density systems, due to the dispersion of loads in rural areas. Distribution*

loan centers are approximately 500 to 3,000 kw each for the majority of systems which operate at 12.5 kv. For a network transmission system delivering power to such load centers, 10 to 30 miles of line are required for each load center.

• *Rural G & T systems have a very high investment per dollar of revenue.* At the end of 1956, a number of such systems having both generation and transmission facilities showed an overall utility plan investment of \$6.40 per dollar of revenue, compared with \$4.00 for Class A and Class B companies. The higher ratio of investment to revenue is primarily the result of the higher proportion of transmission investment.

• *Rural systems are characteristically small in size.* Out of the total of 26 steam generating plants in operation at the end of 1956, 17 of the plants had less than 25,000 kw total nameplate rated capacity, and not one of the plants was rated over 45,000 kw.

• *Over the last several years, the rural generation system has become predominantly steam.* The total capacity of diesel and hydro plants in recent years has changed very little, with additions offset by retirements. Practically all of the total growth is the result of the installation of steam capacity.

• *The basic transmission voltage of the rural transmission system serving a number of distribution systems is generally 69 kv.* Such a network is designed to serve existing load centers at 12.5 kv and to be extended to cover new load centers and to provide loop service. For a number of systems, it has already been found expedient to superimpose on the

basic 69 kv system a higher voltage of 115 kv or 161 kv for bulk supply.

All these characteristics of rural G & T are not necessarily going to be the characteristics of the future. There have been changes since 1936, and there will undoubtedly be more of them.

At one time small diesel plants located at the 12.5 kv load centers (with no transmission) appeared to be an appropriate power supply plan for many areas. With the growth of rural loads—requiring a multiplicity of load centers and with the increased cost of diesel oil and diesel plant investment—such an arrangement became less practical.

By 1950, internal combustion still represented almost 60 percent of the total generation capacity, with steam about 35 percent. By 1957, steam was up to 70 percent and internal combustion down to 25 percent.

The trend towards steam and larger steam units is expected to continue in the foreseeable future. In the next 2 years, about 500,000 kw of additional steam capacity is expected to go into operation on projects now underway. This will raise total steam capacity to about 1 $\frac{1}{4}$ million kw.

The predominance of the use of 69 kv for transmission is also expected to continue, together with increased use of higher voltage for bulk deliveries.

Planning Rural G & T

The design of rural G & T facilities has been influenced both by engineering considerations and by the contractual arrangements made with other systems.

The basic studies for proposed

loans are undertaken by the borrower or groups of borrowers through the employment of a consulting engineer. In addition to the usual review of costs and technical matters, there is also an investigation of all reasonable alternative plans.

One of the most important estimates in connection with power cost studies is that relating to anticipated load growth. The load data used by the borrower and its engineer are the REA-approved load estimates. These are prepared in consultation with representatives of the borrowers and approved by them. These load estimates are used for all purposes and are prepared specifically for generation applications only when up-to-date data are not already available.

If no additional studies or investigations by the borrower's engineer are required, the report is reviewed by REA and an independent power cost study is prepared. The main purpose of this study is to determine the comparative merits of the various plans studied. This frequently involves a comparison between purchased power and a plan of self-generation. In some instances, however, comparisons are between different plans of generation.

The power cost study will also concern itself with the necessary contractual arrangements de-

signed to insure repayment of the loan and with whether the plan proposed will be carried out. If the loan is to be made to a federated cooperative comprised of several distribution cooperatives, it will be necessary, before any of the loan funds can be advanced, for the parties to enter into long-term power supply contracts obligating the members to purchase their power requirements from the federated cooperative. (The member cooperatives are represented on the board of directors of the federated cooperative.) In many cases, contracts with other power suppliers are also a part of the recommended plan and become a part of the loan agreement.

Although the fixed charges for generation or transmission facilities for a proposed borrower are usually less than for a power company, rural systems have the inherent disadvantages of relatively small volume, poor unit efficiencies, and high unit transmission costs, as well as low load factors and high standby costs. These disadvantages are among the factors resulting in the trend toward interconnection with other utility systems and the making of special arrangements, such as interchanges and integration.

(Next month, Mr. Chase will discuss several types of special arrangements in detail.)

EMPLOYEE TRAINING—A group of co-op employees completed a 36-hour electrical course in May, and a second group starts a similar course soon at East Central Oklahoma Electric Co-operative, Okmulgee. Courses are taught by Al Wilf, former instructor in electricity at the Tech School of Oklahoma State University. Course is designed to fit co-op operations.

POWER USE EXCHANGE



DEMONSTRATION CENTERS

—Six communities in the service area of the DeWitt County Electric Cooperative, Cuero, Tex., have installed electric ranges and other demonstration facilities in their community centers. A seventh will go electric later this year. The action came as a result of the co-op's drive to get demonstration centers at key points in its territory. In turn, the co-op assists communities with their programs by giving electrical demonstrations at the centers.

NEW IDEAS—At a new type of trustee meeting inaugurated in April (each trustee and staff employee invited two couples to a dinner meeting) several noteworthy activities of Lorain Medina Rural Electric Cooperative, Wellington, Ohio, were discussed. These were later reported to members in the co-op's newsletter, as follows: "Manager reported on Kitchen Parties; 54 were held this year with over 1,500 guests present . . . Theme of Annual Meeting on August 4 is to be Farm Automation . . . Appliance finance changes were approved: new down payment is 10 percent and interest is 3 percent . . . Co-op plans to hold similar invitation meetings of trustees again at a later date."

EXHIBITS—Cass County Electric Cooperative, Kindred, North Dak., featured some special educational exhibits as a part of its 1958 annual meeting. Members saw how equipment operates on both adequate and inadequate wiring, how accidents with electricity happen and how they might be eliminated, and what to do in case an accident happens. Free 100-watt bulbs were given to persons who were able to toss a hat over an electric eye and turn on a mercury vapor yard-light on display. Members also saw 4-H displays and demonstrations by the two top district 4-H contest winners. Another feature of the exhibit tent was a guessing game.

HONOR PIONEERS — As a highlight of the 20th annual meeting program, the first 20 consumers to receive electricity from Pocahontas County Rural Electric Cooperative, Pocahontas, Iowa, were presented with recognition pins.

FREE HEAT PUMPS—Three heat-pump window air conditioners as top door prizes helped draw the 800 members that attended the 1958 annual meeting of Kay Electric Cooperative, Blackwell, Okla. Two electric heaters were among prizes, which

also included numerous small appliances.

64 DEALERS—From June through August, 64 area electric appliance dealers are offering free wiring installation on window-type air conditioners to members of Duck River Electric Membership Corp., Shelbyville, Tenn. Offer applies to $\frac{3}{4}$ -to 2-ton air conditioners.

HEAT PUMP SERVICING—Three Alabama Electric Cooperative employees from Andalusia attended a 2-day factory training school this spring for instruction in servicing and maintaining heat pumps.

HEATING SCHOOLS—Satisfied users' testimonials on electric heating have provided proof to sell any "doubting Thomas" attending training schools sponsored this year by distribution and generation and transmission co-ops throughout the country. Rushmore G & T Electric Cooperative, Rapid City, S. Dak., held a 1-day institute that included lectures on advantages, testimonials, figuring heat loss and installation, insulation, resistance heating and heat pumps, and selling electric heating. More than 150 contractors, distributors, dealers, architects, and rural coop and municipal power personnel from 6 midwestern states received more extensive training on the same subjects at an institute sponsored by East River Electric Power Cooperative, Madison, S. Dak. Alabama Electric Cooperative, Andalusia, has conducted a series of $\frac{1}{2}$ -day heating training schools, and other G & T co-ops have trained personnel of distribution co-ops on electric home

heating, including Western Farmers Electric Cooperative, Anadarko, Okla., and East Kentucky Rural Electric Cooperative Corp., Winchester.

COOK FREE—"Want to experience first-hand the many advantages offered by electric cooking at no charge? If so, just notify Claiborne Electric Cooperative, Homer, La. An electric range will be installed on a separate meter in your home for 2 weeks at no cost," invited an article in the Claiborne section of *Rural Louisiana*. "After the member has enjoyed the range for 2 weeks, there is absolutely no obligation to purchase it or to promise anything. After 2 weeks, the reading on the meter will be deducted from the member's total kwh consumption. The power use specialist will personally give instructions for proper usage, a big factor in economical and efficient cooking . . . The co-op isn't selling ranges. If, after a free demonstration, a member wants to purchase a range, he can buy it from a dealer of his own choosing."

LAUNDRY SCHOOLS—County power use committee chairmen of Central Georgia EMC, Jackson, Ga., made arrangements with high school home economics teachers for laundry schools during regular class periods this spring. Homemaking students throughout the co-op area learned important facts about using automatic washers of different types properly through commercial demonstrations. Demonstrators for school programs were scheduled by women leaders with Mrs. Elizabeth Watkins, co-op educational director.



ACROSS THE NATION, BO SUMMER



Summer sales campaigns, planned or accelerated in response to President Eisenhower's call for action, are under way in every state where REA has borrowers. Here are more reports on the imaginative and constructive sales activities of REA-financed rural electric systems . . .

ARKANSAS—At Newport, the Farmers Electric Cooperative held an appreciation dinner at a local country club for some 20 dealers who have been working with the co-op in load building programs. At the close of the dinner, Manager Carl Cross told his guests that the co-op would assist them with a monthly direct mail campaign during July, August, and September. Co-op mailing pieces would be designed to show members the advantages of full utilization of electric power in home and on farm.

Cross invited dealers to make up their own mailing pieces to promote any appliance they wished, and to bring them around by the 15th of each month for in-

clusion in the co-op's packet to members. No charge for this, Cross added.

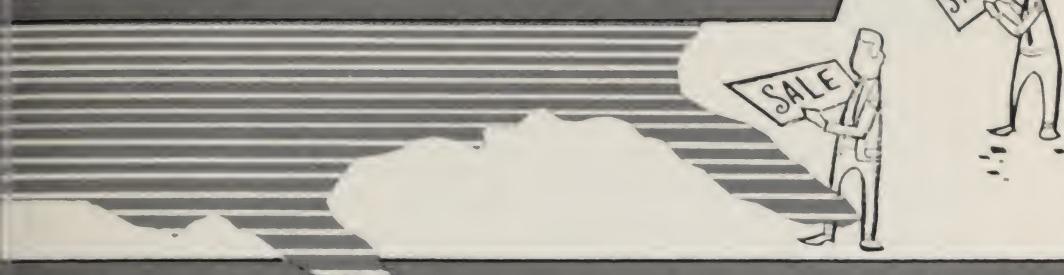
The manager then told dealers that the co-op's annual meeting would be held on August 22, and he asked them what they wanted to do about it. The retailers decided to declare the week of August 18, "REA Week" in Jackson County, during which they would feature special promotional prices for co-op members. There will be "open house" in all dealers' stores, with opportunity for co-op members to register for substantial door prizes, to be awarded at the annual meeting.

And at the Arkansas Valley Electric Cooperative, in Ozark, the Statewide Caravan rolled in for the first of 13 co-op annual meetings. At its appliance auction sale—a regular caravan feature—consumers bought \$1,701 worth of ranges, freezers, washers, dryers, pumps, and small appliances.

No Letdown

ILLINOIS—After completing a dryer campaign so successful that people all over the country imi-

ROWS STAGE ALES CAMPAIGNS



tated it (RURAL LINES, June 1958), the Statewide Load Development Coordination Committee refused to rest on its laurels. It met at once to plan a new dryer promotion. While 14 co-ops participated last time, the group is aiming for 20 participants this time. It also will seek advance assistance of 8 or 10 major manufacturers and plans to ask co-ops to use incentives of their own. Again, the Committee will offer small appliances as incentives to buy.

One Man Show

NEW MEXICO—While working closely with local dealers in staging campaigns, Leo C. Gonzales, manager of Kit Carson Electric Cooperative, Taos, has been running a one-man demonstration of his own. Since he installed an all-electric kitchen in his own home, many consumers have asked to look at it. As a result, at least 12 families have installed all-electric kitchens in their homes.

Full Scale

KENTUCKY—A number of broad, full-scale drives are under

way here. For example, the Licking Valley Rural Electric Cooperative, at West Liberty, drafted a power sales program to extend from July 1 through December 31. Explaining the plan to dealers at four meetings in as many towns last June, the co-op pledged itself to push water systems and ranges in July and August (range saturation is only about 23 percent); light bulbs, through schools and 4-H clubs, in September and October; and small electric appliances in November and December. Tobacco lighting demonstrations are set for the tobacco striping season in October and November. The co-op is offering free installation of major appliances during the promotion periods. In early days of the campaign, dealers reported sales of 14 ranges, 11 pumps, and 18 water heaters.

Like several other Kentucky co-ops, the Blue Grass Rural Electric Cooperative, Nicholasville, took part in a number of breakfast and luncheon meetings for dealers. At one breakfast, held to

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discuss small appliance promotions, 17 dealers and distributors showed up. In the first month of the S. U. S. program, dealers sold 9 water heaters, 10 food freezers, 4 electric clothes dryers, 2 water pumps, 19 ranges, 19 farm security lights, and 2 air conditioners.

One large hardware store in the Blue Grass service area set up a new electric appliance department, and held open house for three days, selling 9 major appliances.

Two-Month Drive

PENNSYLVANIA — Incentives pave the way for sales in the Keystone State. The Valley Rural Electric Cooperative, at Huntingdon, is finishing up an aggressive 60-day major appliance campaign, with big cash bonuses for buyers. Advertising includes a two-page newspaper spread, mailed to members. The drive has full cooperation of local dealers and banks.

And while its drive started long before S. U. S. was born, it's worth noting the record of the Southwest Central Rural Electric Cooperative, at Indiana, Penna. With an offer of \$5 to each dealer's salesman who sold a major appliance, plus a frypan or \$12.50 in cash to the member who bought it, the co-op placed

more than 3,000 appliances on its lines during the last 36 months.

No Bank

NEVADA—Taking advantage of simplified Section 5 loan procedures, the Alamo Power District No. 3, at Alamo, plans to apply for a \$25,000 Section 5 loan. It is expected that consumers will use the money for irrigation pumps and motors, although the borrower expects to add a number of air conditioners and house heating loads to its lines, as well. There's good reason for Alamo's application: The nearest bank is at Caliente, 55 miles away.

Like Leo Gonzales at Taos, Alamo's bookkeeper, Mrs. Lois Potter, is waging a single-handed promotion. She has installed both air conditioning and electric house heating in her own home, invites consumers in for demonstrations.

Marked Calendar

TEXAS—Eleven dealers cooperate with the Rita Blanca Electric Cooperative, Dalhart, in a continuous promotion campaign. It follows the Power Use Calendar, and the co-op pays for installation of major appliances sold during the appropriate calendar month. It also furnishes dealers with names of prospects,



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five at a time. When dealers contact their five and report on results, they receive five more names. Dealers have been getting letters from the co-op all summer, reminding them of their special sales responsibilities during S. U. S.

Deep (South) Freeze

ALABAMA — The Statewide Power Use Committee is sponsoring a freezer promotion during June, July, and August, with 9 co-ops aboard the bandwagon. Statewide papers carry campaign announcements and coupons. A member returning a coupon showing he has purchased and installed a freezer gets his choice of a free steam iron, mixer, or frypan.

Open House

WISCONSIN — Home water system drives are being pushed all across Wisconsin this summer. At Phillips, the Price Electric Cooperative kicked off its campaign with 16 dealers participating. It has scheduled and is holding open house demonstrations at all dealers' headquarters. In May, 8 meetings were held, with an average of 42 members attending each meeting. Dealers sold 21 pumps at meetings, along with 4 hot water heaters, and picked up 26 more prospects.

Bargain Frypans

TENNESSEE — Members of the Chickasaw Electric Cooperative, Somerville, receive a free frypan with each home freezer they buy. In early June, they had already purchased 26, and the co-op planned to continue the drive through July. A subsidiary frypan promotion is going over, too. The co-op supplies them to dealers, who sell them for \$14.95 each, and still make a \$2.25 profit on each sale.

A \$138 Range

UTAH—Free installation and other arrangements with dealers enable consumers of the Moon Lake Electric Association, Altamont, to get a \$199 electric range into their homes for only \$138. The co-op also offers \$20 toward installation of water heaters. Both promotions are being advertised by radio, newspaper, and newsletter.

Big Returns for \$20

COLORADO — Mountain View Electric Association, Limon, held a dinner meeting for dealers to start off its S. U. S. drive. With a contribution of \$20 toward each dealer's installation cost for dryers, ranges, and heaters, the co-op added 62 dryers, 35 ranges, and 42 heaters to its lines by the end of May.

IOWA's Youth Bus Tour

THROUGH a contest sponsored by 17 Iowa co-ops in local high schools, the Iowa Rural Electric Cooperative Association led off a new co-op venture this summer — an all-expense-paid youth bus tour to Washington, D. C.

Twenty-six Iowa high school juniors and seniors—winners of an essay contest—made the 9-day bus trip, accompanied by contest winners from three rural public power districts that pioneered a similar program in Nebraska this year.

Iowa statewide General Manager Earl L. King and Dr. Charles R. Aiken, director of education and research, and their wives, accompanied the young people as tour directors and chaperones.

The busload of winners left Des Moines early Saturday morning, June 14, and returned Sunday, June 22.

Subject of the 500-word essay that won the youths their trip was "What Rural Electrification Means to My Community and to Me." In a few co-op contests, winners were also chosen for other traits besides writing ability, including demonstrated leadership in 4-H, FFA and FHA activities.

Manager King said that statewide rural co-op associations in several midwestern States are planning similar contests with trips as prizes next year. The Iowa-Nebraska tour covered visits to REA, national co-op and farm organizations, and Congressmen, as well as Washington's national shrines, museums, buildings and parks. The young people also spent a day at USDA's Agricultural Research Center at Beltsville, Md.

REA Borrower Payments Top \$1 Billion

TOTAL payments to the Federal Government by REA electric and telephone borrowers reached \$1,002,267,186 on June 1, 1958.

This figure includes \$545,694,222 repaid by borrowers on the principal of their loan obligations, \$329,493,597 paid in interest, and \$127,079,367 paid in advance of due dates.

The \$672.8 million paid on principal and ahead of schedule exceeds the total amount of loans advanced to borrowers during the first 11 years of the rural electrification program.

As REA borrowers passed the

\$1 billion mark, only 4 electric borrowers were overdue in payments more than 30 days; only 16 telephone borrowers were behind.

Another milestone was passed on April 10, as electric service for the 5 millionth rural consumer was provided for in loans approved by REA to electric borrowers.

The 1 million consumer level in loans approved under the program was reached Sept. 12, 1940. The 2 million level was reached May 23, 1946; the 3 million level Nov. 10, 1948; and the 4 million level May 6, 1952.

Administrator Hamil presents a Certificate of Proficiency to Benford Rhodes, who is accompanied by Jones-Onslow Manager Fred Harman, Jr.

First Student Completes REA Accounting Course



THE first student in the Nation to complete satisfactorily the correspondence course in REA Electric Borrower Accounting came to Washington last month to receive his Certificate of Proficiency from REA Administrator David A. Hamil.

He is Benford Rhodes, who says he is a combination radioman, dispatcher, chief storekeeper, and work order supervisor for the Jones-Onslow Electric Membership Corporation, Jacksonville, N. C. Despite Rhodes' many jobs at the co-op, he managed to finish the 12-lesson advanced course in a little more than 3 months with an earned grade average of 94.32.

In his visit to REA headquarters, Rhodes was accompanied by Manager Fred Harman, Jr., and a delegation of directors and the co-op attorney.

In presenting the Certificate, Mr. Hamil congratulated Rhodes and asked him if the course had been difficult enough.

"I'm glad it wasn't any harder," Rhodes replied. Although the radioman had not had any previ-

ous accounting experience, he said that he had learned enough from the USDA Graduate School course to take over as assistant bookkeeper.

"I think the course would help a man in any job around a co-op," he added.

Besides Rhodes, two cashiers at Jones-Onslow are currently enrolled in the course. Manager Harman said his co-op picked up the tab for the course, but warned that the cost would be deducted from an employee's pay if he failed to complete it.

As of July 1, 1958, the Graduate School reported that 248 students are enrolled in REA Electric Borrower Accounting and 111 are taking REA Telephone Borrower Accounting. An introductory correspondence course called Basic Accounting currently has 408 enrollees.

Students taking the electric course include managers, engineers, office managers and bookkeepers, and even an accountant for a consulting firm of CPA's.

Co-ops Battle for better Wiring

A number of co-ops are putting on more pressure in the never-ending battle for improved farmstead wiring, using surveys, Housepower campaigns, special offers on farm load center change-outs, bonus installation awards, and inspections.

In March, Tri-County Electric Cooperative, Carrington, N. Dak., mailed its members a self-help survey form, called a "wiring check sheet." It was developed by the North Dakota Rural Power Use Council. (See back cover.)

"Only by concentrated educational programs," said Tri-Coun-

ty Manager E. M. Arnston, "can we hope to get our members equipped to handle the coming electric equipment and resulting electrical loads in farm distribution 10 years hence."

While few consumers return the lengthy wiring check, North Dakota co-ops using it report that it is having the desired effect. In the course of an appliance survey, one co-op found that over 50 percent of the members used the check sheet, but declined to return it for fear of admitting guilt. Questioners found that the farmers intended to correct their wiring deficiencies.

Directors of the Claverack Electric Cooperative, Towanda, Pa., employed fire underwriters electrical inspectors to re-check all farm and home wiring facilities on the Claverack system.

Here's how the program worked, as reported in the June issue of *Claverack Chatter*:

"All costs will be borne by the cooperative. No one will be required to do any rewiring or to make any changes unless he wishes. Each member will be given a certificate if the wiring is approved at the time the inspector makes the inspection.

Suggestions will be only minimum standards . . . Please make provision for future equipment that may be added. This will eliminate future alterations."

Said Manager J. L. Hubbard, "The program should benefit everyone by improving everyone's fire prevention risk and could very well reduce or effect a more favorable insurance rate. It will be a good record for you to have, as one never knows just what could happen."

Shout it from the Treetops

ED HILDRETH, a confessed "publicity hound," has little sympathy for the businessman who complains that the world isn't interested in him.

As manager of the DeKalb Telephone Cooperative, in Alexandria, Tenn., 34-year-old Hildreth has discovered that publicity is what you make it.

"I've learned," he mused, "that when you have some important news, you should shout it from the treetops if you have to."

So far, he hasn't had to climb any trees, although he occasionally utilizes some unorthodox news channels to spread the word.

One is the town barber.

"We've had two small increases in our subscription rates since we started," Hildreth recalled. "The first time, we just made one cold announcement of the increase, and we lost more than 50 subscribers."

The next time an increase was in the offing, Hildreth decided to apply some small town public relations.

"I softened people up in advance to expect the blow," he reported. "I picked out several key men in the area, like the barber and the operator of a local milk plant, and personally sold them on the reasons for the rate increase. When that second increase came, we only lost 4 subscribers."

Hildreth uses conventional news channels, too. Last spring, he decided that it was time the press got acquainted with DeKalb's operations and invited local editors to come in for a one-day tour of the plant. He drew

not only weekly editors, but also the rural editor of a big city daily.

"I introduced the press to every employee in the co-op," said Hildreth, "and I didn't stop there."

The tour included stops at a general store, where the owner still kept his old magneto set on the wall as a reminder of the past, and a modern cheese factory, where reliable service is essential to the conduct of business. After visiting with farmers who remembered "back when," Hildreth took the press representatives to the local barber shop, which has replaced "Central" as the town message center.

"The result of the tour," reported the young manager, "was that we filled one whole section of the *Smithville Review* with stories and pictures, and landed a two-page spread in the Sunday *Nashville Tennessean Magazine*. It proves that your story will interest a lot of people if you go to the trouble to present it in the right way."

Hildreth examines the results of his one-day tour for the press—five pages of stories and pictures on his co-op.



S STATEMENT SHOWS THE VALUE OF ALL
LGS OWNED AND ALL THINGS OWED AS OF A
CITATE DATE

YOUR TELEPHONE SYSTEM BALANCE SHEET

DECEMBER 31, 1955

YOUR COMPANY OWNS

ASSETS

LUDGES ALL COSTS INCURRED IN ORGAN-
VING YOUR COMPANY; OBTAINING FRAN-
SES, EASEMENTS AND RIGHTS OF WAY;
STRUCTURING, INSTALLING AND ACQUIR-
LAND, BUILDINGS, C O EQUIPMENT,
TSDIE PLANT, TELEPHONES, TRUCKS,
OLS, OFFICE EQUIPMENT AND FURNITURE.
TIMATE OF WEAR AND TEAR AND OTHER
CTORS AFFECTING THE CENTER
INE IN THE

TOTAL TELEPHONE PLANT
LESS: RESERVE FOR DEPRECIATION
TOTAL PLANT (LESS RESERVE)

\$465,280
22,450

LIABILITIES

U. S. DEPARTMENT OF AGRICULTURE
RURAL ELECTRIFICATION ADMINISTRATION
FINANCIAL AND STATISTICAL REPORT
FOR TELEPHONE SYSTEMS

TO U. S. DEPARTMENT OF AGRICULTURE, REA WASHINGTON 25, D. C.

INSTRUCTIONS: System reported and other copies to U. S. Department of Agriculture, REA, Washington 25, D. C. For detailed requirements see REA Bulletin 401.

REPRINTED

ASSETS AND OTHER DEBITS

TELEPHONE PLANT IN SERVICE

2. TELEPHONE PLANT UNDER CONSTRUCTION

3. PROPERTY HELD FOR FUTURE TEL. USE

4. TELEPHONE PLANT ACQUISITION ADJUST

5. TELEPHONE PLANT ADJUSTMENT

6. TOTAL TELEPHONE PLANT

7. DEPRECIATION RESERVE

8. TOTAL TELEPHONE PLANT LESS RESERVE

9. INVESTMENTS AND LIQUID

10. CASH AND WORKING FUNDS

11. CASH TRUSTEE-REA CONSTRUCTION FUND ACC

12. OTHER

PART A. BALANCE SHEET	
BALANCE END OF PERIOD	LIABILITIES AND OTHER CREDITS
22 CAPITAL STOCK OUTSTANDING	
23 CAPITAL STOCK SUBSCRIBED-UNISSUED	
24 CAPITAL STOCK ISSUED	
25 TOTAL CAPITAL STOCK	
26 MEMBERSHIP & CAPITAL CERT OUTSTNDG	
27 MEMBER & CAP. CERT SURCHG & UNISSUED	
28 TOTAL MEMBERSHIP & CAPITAL CERTIFICATES	
29 BORROWED CAPITAL CREDITS	
30 CAPITAL SURPLUS	
31 SURPLUS-OR MARGIN RESERVED	
32 UNAPPROVED CAPITAL & MARGIN & CAPITAL CREDITS	
33 TOTAL SURPLUS-OR MARGIN & CAPITAL CREDITS	
34 LONG-TERM DEBT-REA NOTES	
35 LONG-TERM DEBT-OTHER	
36 TOTAL LONG-TERM DEBT	
37 TOTAL LIQUID ASSET	

PENT LIABILITIES:

\$ 12,310

2,750

AMOUNTS OWED FOR MATERIAL
SUPPLIES, CONTRACT CONSTRUC-
TION, AND CONNECTING COMP-
TOLLS.

AMOUNT CURRENTLY DUE REA
LONG TERM DEBT

AMOUNT OF CASH YOUR COMP-
ANY NEEDED TO PAY DEBTS CUR-
RENTLY AND PENDING

TELEPHONE OPERATIONS M
SECTION 1071
ISSUE NO. 1 JUNE 1956

What

YOUR TELEPHONE SYSTEM'S
FIND

Tool for Telephone Management

by Mrs. Henrietta Price Gillespie
Office Manager — Bookkeeper
Surry Telephone Membership Corporation
Dobson, North Carolina



Mrs. Gillespie, a self-appointed defender of REA's Operating Report, tells why it is one of telephone management's most valuable business tools. This is a condensation of a talk she delivered last spring before the Carolina-Virginia Telephone Membership Association Conference.

SOME of us, perhaps, view REA Form 479, the Operating Report, simply as a paper which must be prepared and sent to Washington not later than the last day of the month following the close of the quarter. After careful study and analysis of

the report, however, I am sure one begins to realize the great value it can have for the borrower as well as for REA.

If your system is now in full operation, all parts of the Operating Report will be helpful. If you are still in a construction

period, you will find that an evaluation of several parts will prove sufficient for management studies.

How can it be used to advantage by the borrower?

Look first at the manager. It is his responsibility to report to the board of directors on the progress of the system. The Operating Report can be the source for this report to the board, backed up with such supplementary graphs and charts as he feels are pertinent.

Next, look at the board itself. It is the responsibility of the directors to examine the progress of their system through periodic reviews of operations to determine the financial condition and position of the company or co-op. Operating Reports can give them a comparison between actual operating costs and operating budget estimates. (An aid to better understanding of the Operating Report by directors is REA's "What your Telephone System's Financial Reports Tell You.")

Form 479 is comprised of three sections: Part A, the balance sheet; Part B, station data, and Part C, operating report and surplus or margin analysis.

The balance sheet is a statement of financial situation as of a given date. This is a familiar definition to all bookkeepers from school days.

Part B provides a limited analysis of station data by exchange and grade of service. At the time of construction, this analysis should prove sufficient for the study by management. After cutover, however, further analysis might be required, such as percent of each grade (1-party, 2-party, etc.) to total residence

or business stations, or percent of extensions to total stations. Any further analysis of station data would depend upon the information desired by management, and should be considered in connection with any proposed merchandising campaign.

Part C of Form 479 has been designed to permit comparative presentation of current operations with last year's operations and the current year's budget. The additional information is optional, but in order to make a complete analysis of the operating picture, it would certainly be necessary to make these comparisons.

The first section is Operating Revenues. There are two aspects of operating revenue which concern management: Its adequacy and the source of the revenue. The adequacy of revenue must be considered in relation to operating expenses and the cost of borrowed capital. The source should be examined by classification in relation to initial or revised estimates of revenue.

The second section is Operating Expenses—the costs of operations which reflect the efficiency of a system. Again, we find the importance of comparison to test the efficiency of operations and to provide reliable information for effective budgeting and control.

Other charges and credits are necessary to obtain a correct picture of the monthly or quarterly operating results. Taxes, depreciation and amortization expenses, and other income and deductions are included.

As a continuation of the operating statement, Form 479 provides an analysis of earned surplus which shows changes in

surplus (or deficit) resulting from operations and other transactions, beginning of the year to the date of the report.

On the next line are the operating ratios. These are a measure of operating efficiency which indicate the percent of total operating revenues utilized in operations—either on a cash or accrual basis. In other words, the ratios give a quick picture of revenue and expenses. The cash operating ratio, which excludes depreciation and other non-cash writeoffs, is obtained by dividing

total operating expenses and taxes by total operating revenues.

The accrual operating ratio would include all operating expenses and deductions, including depreciation, taxes, and interest. It will be noted that a low ratio suggests efficient operations, while a high ratio tends to indicate inefficient operations.

The Operating Report is a well planned report that will assist both borrower management and REA in interpreting current conditions and planning for growth and development.



Give the Job to the Girls

ACCORDING to an old adage, if you want a job done well, pick the busiest man you know. The directors of the Chibardun Telephone Cooperative, Menomonie, Wisc., have a new angle on this. It should be: "Pick the busiest woman you know."

Two busy housewives, Mrs. Lyle Bjork and Mrs. Norval Beyrer, did so well at collecting right-of-way easements in their home district of Sand Creek that they were given the task of signing up people in two adjacent districts. They had first collected 216 signatures in three weeks on their home grounds, which are represented on Chibardun's board by Mrs. Bjork's father, August Beyrer. (He is also Mrs. Beyrer's

father-in-law). It took five more weeks to get 384 more easements. In all, only 15 people contacted by the two women failed to sign on the dotted line.

They put 1600 miles on their speedometer, got in and out of the car an average of 20 times a day, had the usual house-to-house salesman's experience with unfriendly dogs. It was the one who liked dogs, ironically, who finally got bit.

They had little trouble answering questions about the new telephone cooperative, for both have been steeped in cooperative lore since childhood. The two sisters-in-law are daughters of organizers of the Dunn County Electric Cooperative, in Menomonie, and the Jackson Electric Cooperative, at Black River Falls.

This background helped them to spend 12 hours a day, 4 days a week, collecting easements. Fortunately, both of them had electrified kitchens and cooperative husbands.

Borrowers Invent Rotating Directory, Exhibit Phone

INGENIOUS REA borrowers have come up with two new inventions—one sound and practical, the other a Rube Goldberg contraption that drew big crowds at a recent fair.

At West River Mutual Aid Telephone Corp., Hazen, N. Dak., employee Dale Albers was annoyed by the frequent disappearance and destruction of telephone directories in outdoor booths. He replaced them with a rotating, visible directory cheaply constructed of common materials. The cylinder is a length of standard size stove pipe. End pieces are cut from a 1x6-inch board. The bracket is strap iron and the plastic covering can be bought at most department stores.

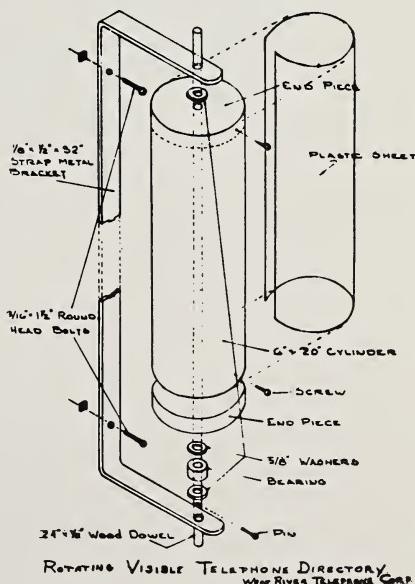
The theft-proof directory will accommodate about 1,000 listings, which can be pasted onto the cylinder simply by removing the plastic sheet. Albers is not a plantman, but works in the easement and membership department.

Manager Gordon Grant of the Marquette-Adams Telephone Cooperative, Oxford, Wisc., is designer of a do-it-yourself telephone that really works. He made it up for a fair exhibit. The instrument is made of wood, with pop bottle tops serving as finger holes on the dial. The handset has a soup can at either end, and rests in a crotch cut from a small



Manager Gordon Grant "dials" a number on his Rube Goldbergish telephone.

tree. (Under it is a microswitch.) The dial is grooved, and around its periphery is a piece of fish line that runs up and over two spools. An index card is the governor, and nuts and bolts are the driving mechanism. Except for a slightly tinny sound, the phone worked very well.

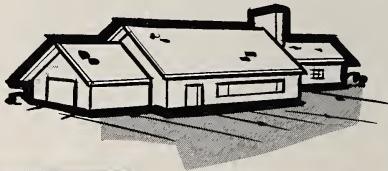


UNITED STATES
GOVERNMENT PRINTING OFFICE
DIVISION OF PUBLIC DOCUMENTS
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, \$300
(GPO)

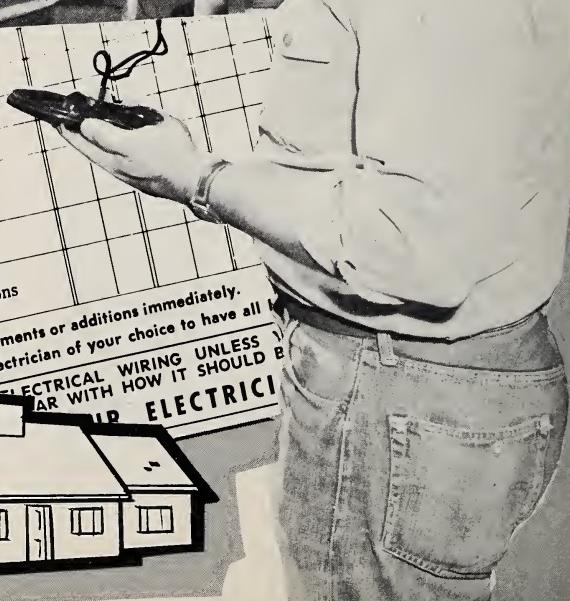
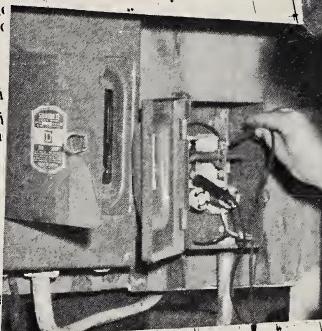
Housepower



Join the all-industry effort to bring farm wiring up-to-date . . . urge consumers to maintain and expand wiring so that they can live and farm better electrically.

1. Bare ground wire on outside of building unbroke and attached to entrance head and to ground rod to the building.
2. Entrance cable or conduit firmly attached
3. Insulation on all exposed wiring in good condition
4. All fuses 15 amps except in special wired circuit (20 amp or larger fuses permitted only in kitchen or other special appliance or equipment circuit).
5. Enough circuits to eliminate blown fuses or tripped breakers.
6. All major appliances and permanently installed motors on separate circuits.
7. Extension cords used only for portable equipment.
8. All extension cords of rubber covered wire and in good repair.
9. Enough outlets to eliminate octopus plugs.
10. All switches work properly.
11. All plug-in outlets work properly.
12. All lights work properly.
13. Lights adequate for easy working or reading.
14. Motors on all equipment clean, properly oiled and serviced. (Belts tight, bolts tight, housing protected).
15. Permanently installed motors have overload protection.
16. Grounding wires connected to all permanently installed motors, all equipment in damp locations or used with water, and all portable tools.

House Barn Granary Shop
Yes No Yes No Yes No Yes No



► Make all needed repairs, replacements or additions immediately.
► Take this check sheet to the electrician of your choice to have all checked.

DON'T HESITATE TO CALL YOUR ELECTRICIAN

